

**There are two types of
people in this world:**

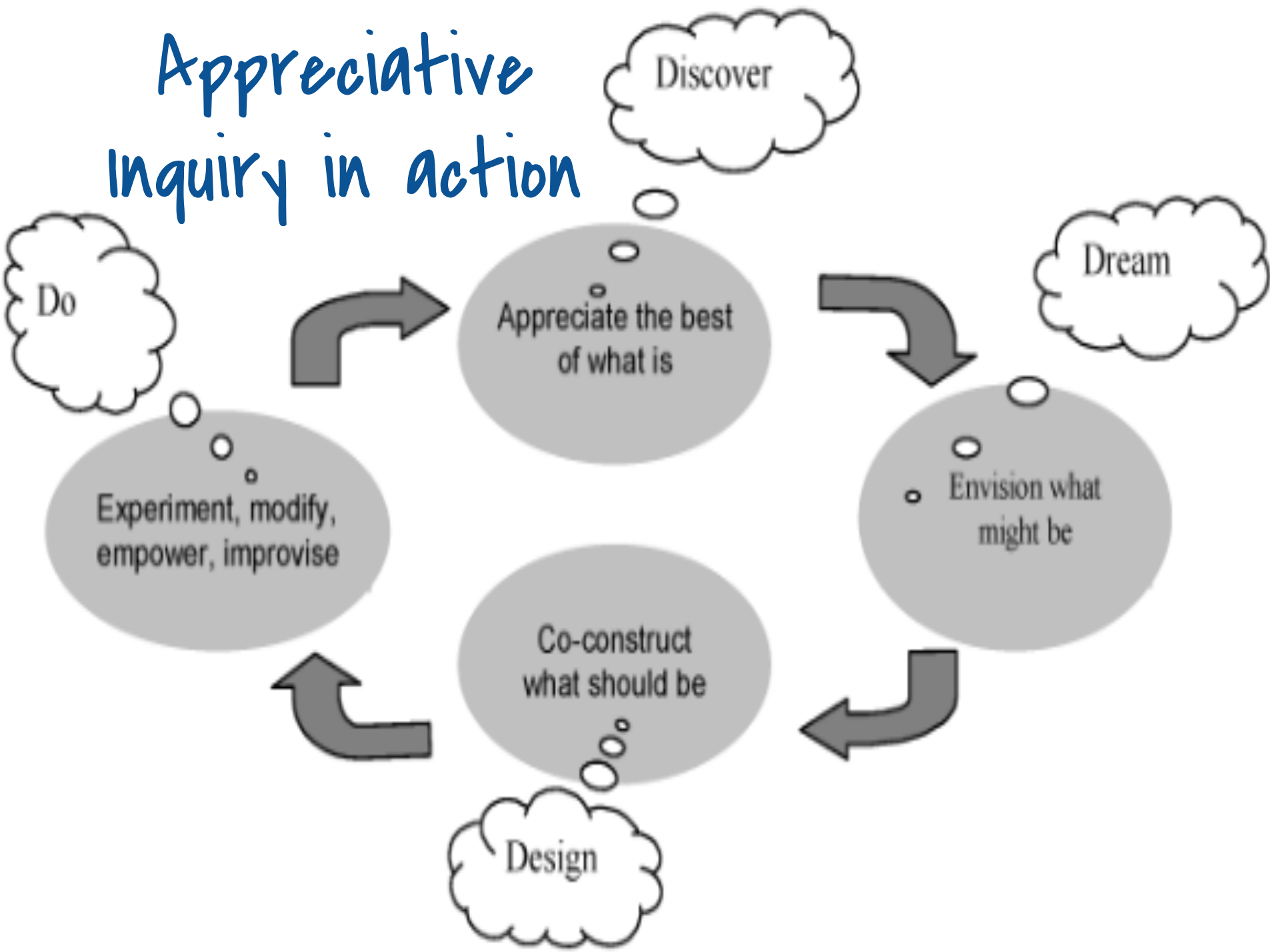
**Those who can extrapolate
from incomplete data**

Methods of Research

Krista Leh Rundell

Kyle Longacre

Appreciative Inquiry in action



How would you
describe a perfect
school?

What is a real
strength of your
school?

What unique
strengths or skills do
you possess to help
transform your
school?

Course Objectives

- Recognize the operationally defined terms utilized in the research problem and study.
- Identify the research problem in a study.
- Identify the relevant conclusions of the review of the literature.
- State the research question related to the research problem and identify the variables.
- Identify the research design.
- Describe the sampling techniques and research instruments utilized in research studies.
- Critically analyze the potential strengths, as well as potential threats to the external and internal validity of the research investigation.

The Projects

#1 Develop your own research question and framework that you can present to your School Board

#2 Critique of Educational Research Article or Video

Expectations of the Class

Know	what	Learned







Cover Crops



AERA

Purpose of Educational Research

- Advance knowledge of education and learning processes
- Develop the tools and methods necessary to support this endeavor
- Aim to describe, understand, and explain how learning takes place throughout the life cycle
- Describe how formal and informal processes of education affect learning, attainment, and the capacity to lead productive lives
- Build cumulative and sound knowledge about human and social process of fundamental significance to individuals, groups, and society

Traditional Research

- Researcher investigating teacher's practice
- To change, improve, or document someone else's teaching

Action Research

- Teachers documenting their own practice
- To change, improve, or document one's own teaching

THE EVOLUTION OF INTELLECTUAL FREEDOM

I'M GOING TO
RESEARCH
WHATEVER
I WANT!

I'M GOING TO
RESEARCH
WHATEVER MY
PROFESSOR
WANTS!

I'M GOING TO
RESEARCH
WHATEVER MY
TENURE COMMITTEE
WANTS!

I'M GOING TO
RESEARCH
WHATEVER MY
GRANT COMMITTEE
WANTS!

I'M GOING TO
RESEARCH
WHATEVER I-

"Research
In
Peace"

RIP

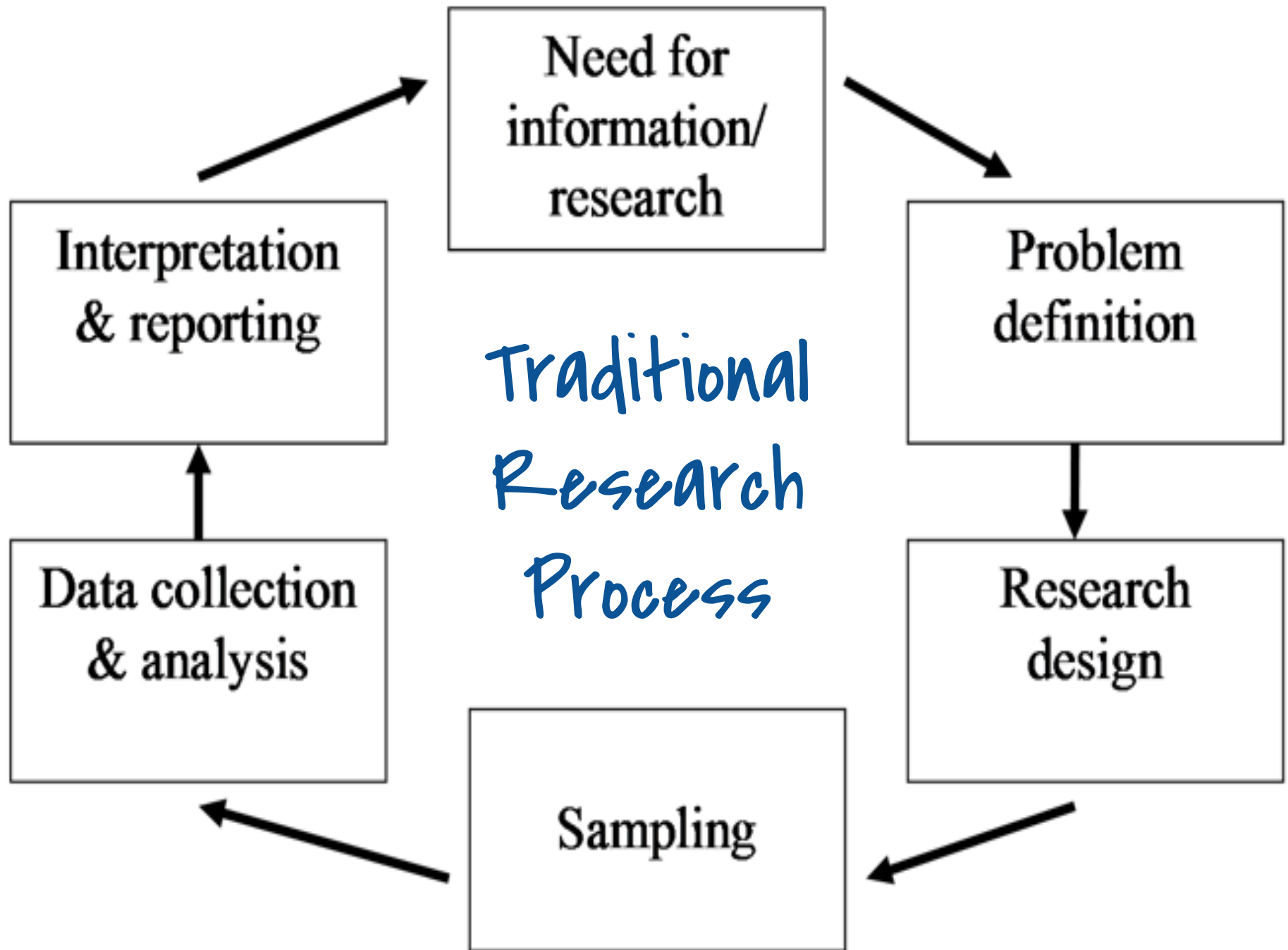
BEFORE
GRAD SCHOOL

GRAD STUDENT

ASSISTANT
PROFESSOR

TENURED
PROFESSOR

EMERITUS
PROFESSOR





Identify a Topic & Develop a Research Question



Selecting a Topic

- Theories
- Observations
- Replication
- Library Research



What do you want to know about?



Descriptive

Causal

Relational &
Predictive

Questions Research Can Address



Descriptive

Causal

Relational &
Predictive

BLOCK SCHEDULING

Characteristics for Formulating a Great Research Topic

- declarative form
- specific, clear, concise
- independent and dependent variables
- testable
- enhances current research

1. SEL
2. Teachers
3. Undergraduate

GOAL: Change program requirements for undergraduate teacher prep programs

- impact of SEL in undergraduate courses
- examination of SEL in undergraduate courses

IV - type of college, enrollment, Bachelors/Masters, enrollment in ed program

DV - is SEL present, commonalities, & to what degree?

Interpret and categorize results

Characteristics for Formulating a Great Research Topic



* Does not have to be “correct”

Moving from Observation to Researchable Question

SCHOOL
IMPROVEMENT
PROCESS:

- Core Learning
- Personal Skill Development

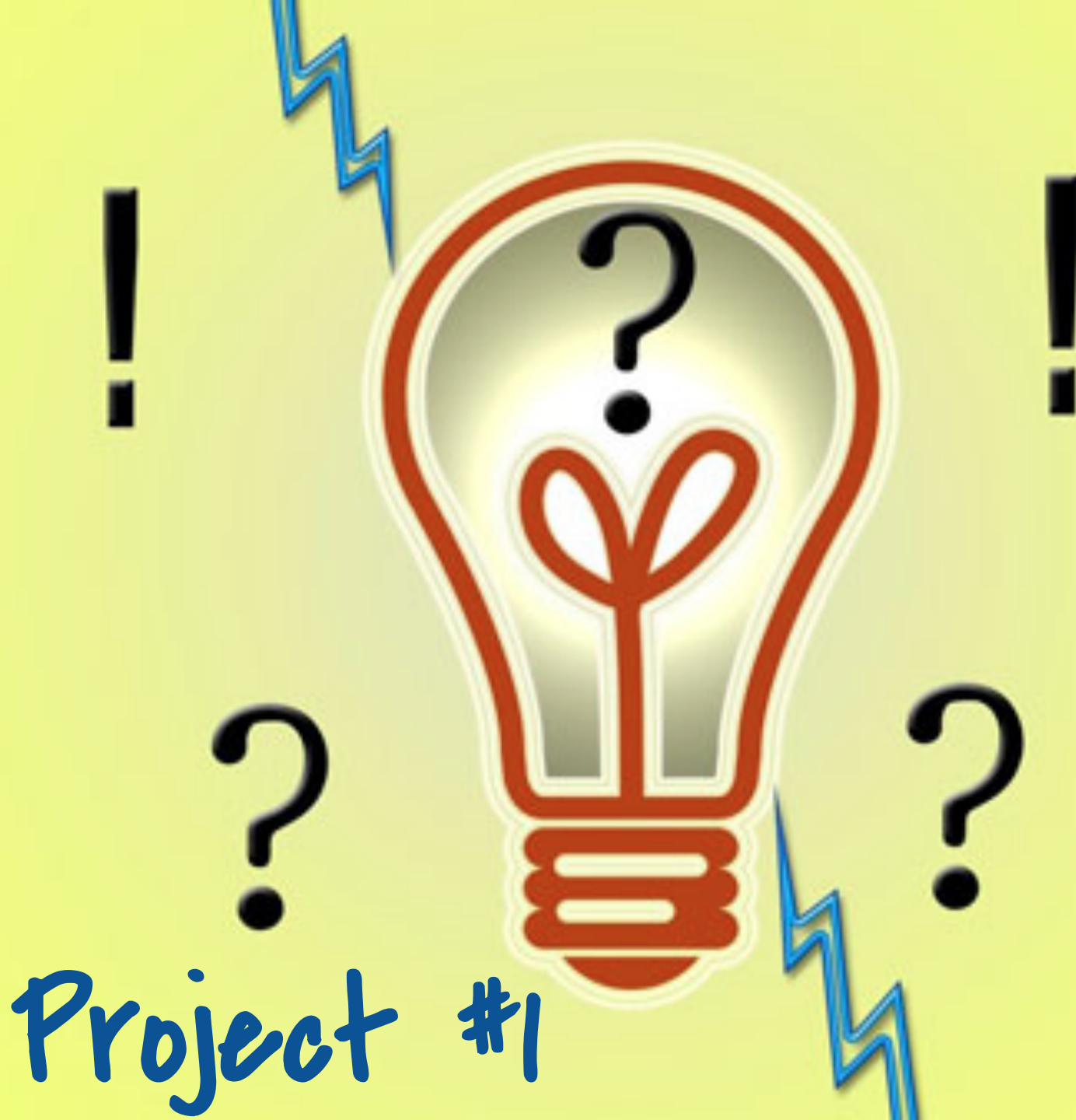


Moving from Observation to Researchable Question

Observation	Researchable Question
I have twenty students in my room.	How effective is a 1:20 ratio of teacher to students in promoting academic achievement?
As a result of our school moving to full inclusion, I have children with physical disabilities within my class.	Would openly discussing the child's disability with the class help to have the child assimilated within the class?
Students seem to be having trouble taking complete and accurate class notes.	

Observation to Researchable Topic





Project #1

OMG! SLOW DOWN!



Yer gonna get us KILLED!

WELCOME
BACK!

Opening
Whip

www.CartoonStock.com



“If your calculations are correct, this completely revolutionizes everything we thought we knew about why chalk squeaks on a blackboard!”

Research Designs

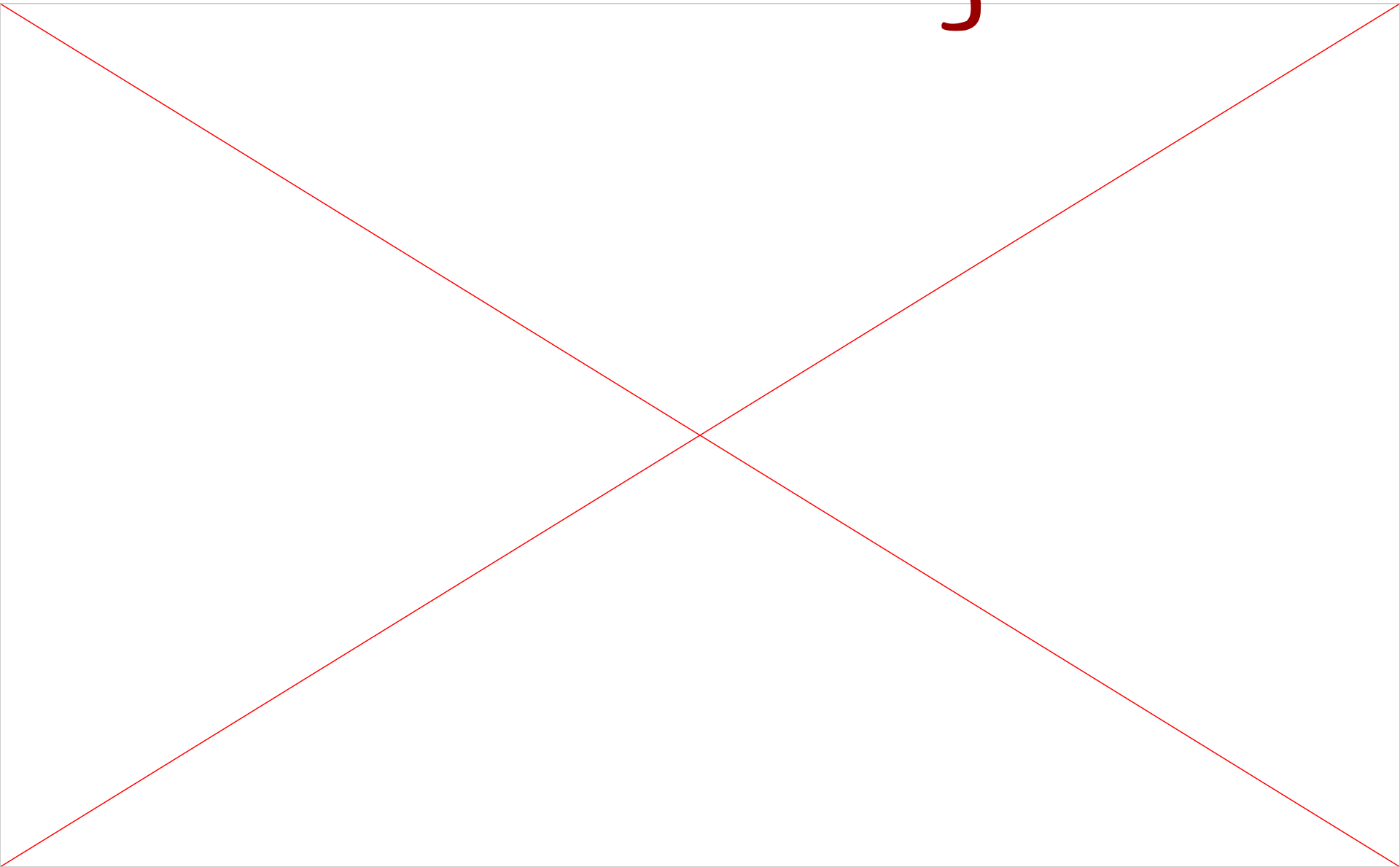
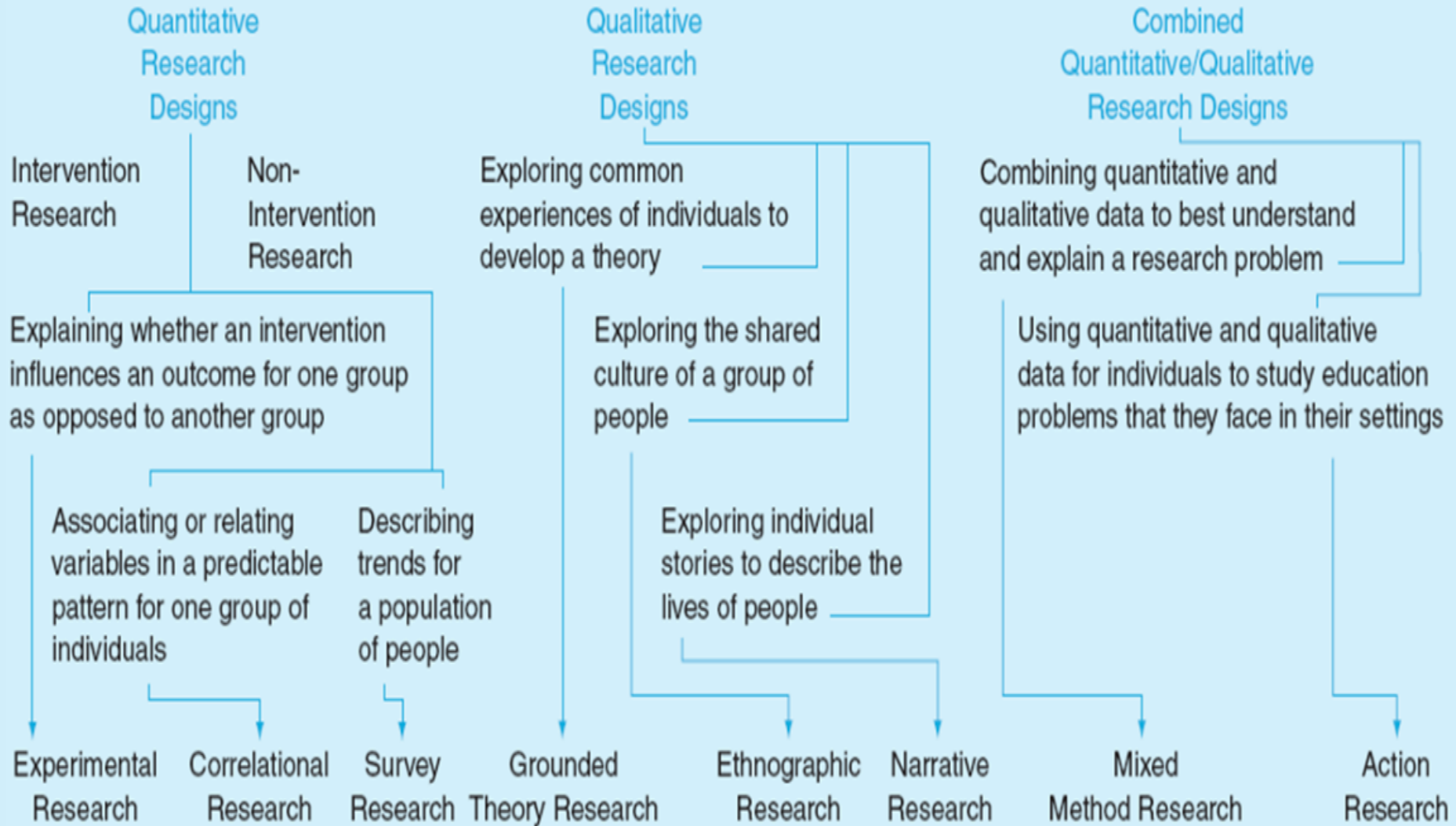


FIGURE 1.4

Types of Quantitative and Qualitative Research Designs and Their Primary Uses





Literature Review

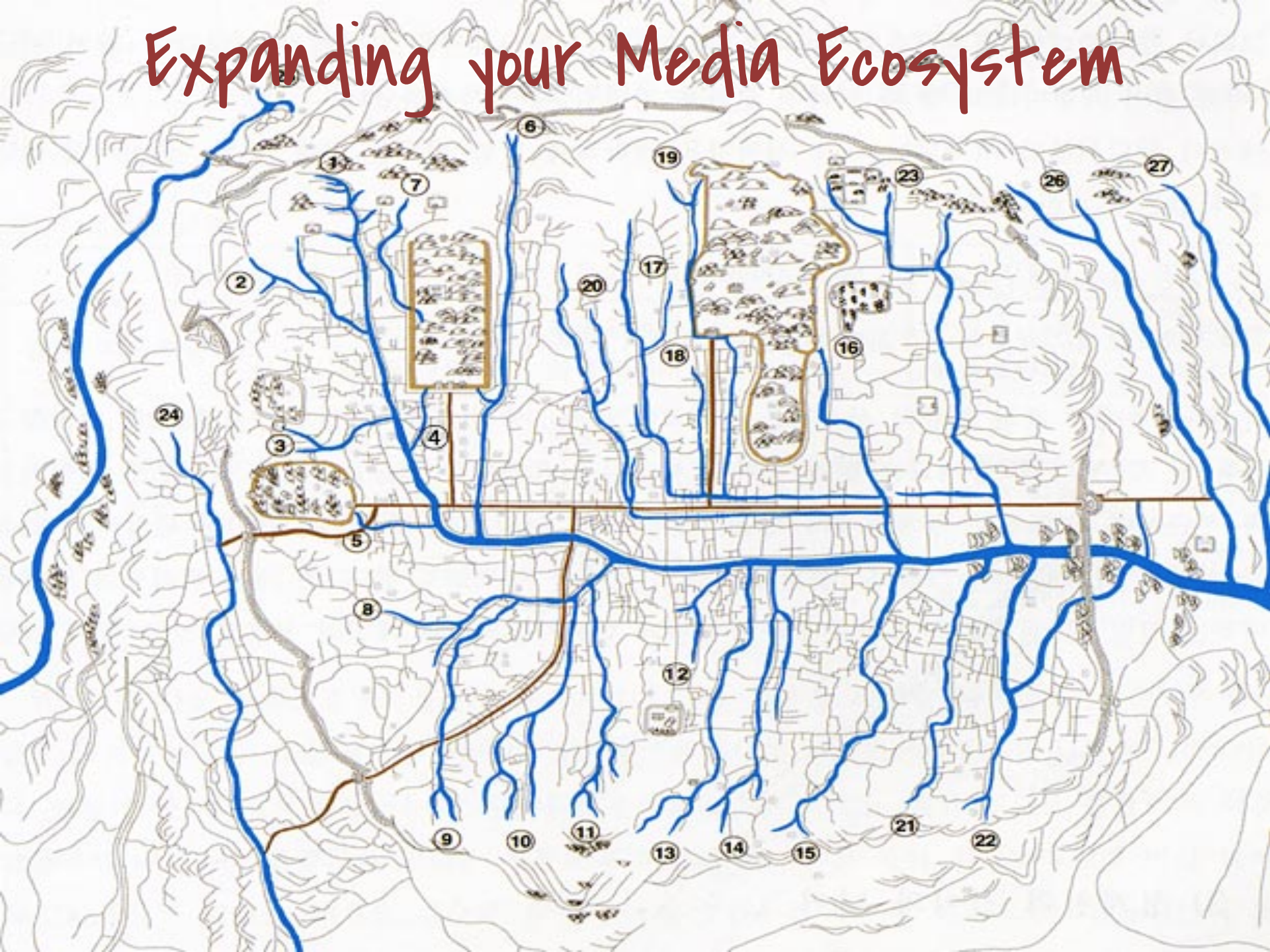
Domain: PEC-11-AG
Password: Franklin400

FYI - we'll be ending
class today at 4:00.
:D

Literature Review

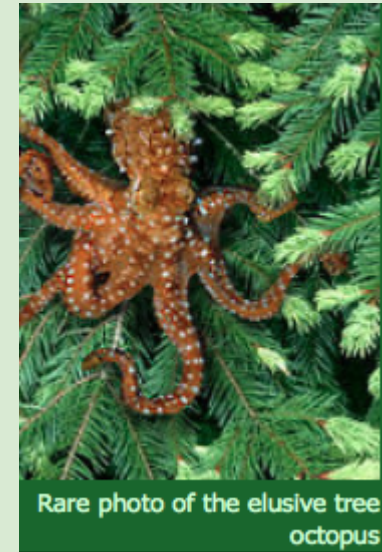
- precursory introduction to a research paper
- process of summarizing and synthesizing info from other sources and documenting it
 - ... but not a collection of quotes or a paraphrasing of other sources
- critical, in depth evaluation of previous research (all sides explained)
- traces the intellectual progression in the field
- expands upon the reasons behind selecting a question

Expanding your Media Ecosystem





<http://www.virtualsalt.com/evalu8it.htm>



<http://zapatopi.net/treeoctopus/>

Summary of The CARS Checklist for Research Source Evaluation

Credibility	trustworthy source, author's credentials, evidence of quality control, known or respected authority, organizational support. Goal: an authoritative source, a source that supplies some good evidence that allows you to trust it.
Accuracy	up to date, factual, detailed, exact, comprehensive, audience and purpose reflect intentions of completeness and accuracy. Goal: a source that is correct today (not yesterday), a source that gives the whole truth.
Reasonableness	fair, balanced, objective, reasoned, no conflict of interest, absence of fallacies or slanted tone. Goal: a source that engages the subject thoughtfully and reasonably, concerned with the truth.
Support	listed sources, contact information, available corroboration, claims supported, documentation supplied. Goal: a source that provides convincing evidence for the claims made, a source you can triangulate (find at least two other sources that support it).

[http://search.
ebscohost.com/](http://search.ebscohost.com/)

Go Dig a Hole



Username: first initial,middle
initial_ last name(8)

or

first and second initial_lastname
(8)

PW: date of birth 6#@Nu

IRB Process : Ethics





Institutional Review Board Process

- A promise that you are going to do no harm
- All info will remain secure and confidential
- Consent to Participation (Permission from parents for minors)
- Identify measurement tool
- Provides answers to the following questions:
 - Why is research needed? (purpose of study)
 - Who is involved? (what are you going to do to those people?)
 - What are you doing with the data?
 - What are the risks?
 - Any conflicts of interest?



Consent
Privacy

Harm
Deception

Boyhood

A Class Divided

10 Child
Studies

Bully: A
Documentary

Determining time frame,
Defining the population,
and
Identifying variables



“Upper panel is my first 4 years of work,
but the lower panel took only 1 year.”

Time Frame

- Cross Sectional
 - single point
- Longitudinal
 - over time
- Repeated Measures
 - a few observations
- Time Series
 - 20 or so observations



Defining the Population

- Population
 - all
- Sample
 - selected
- Response Rate
 - complete



* More people responding = more accuracy

- Small sample (<150,000)
= 10-15 %



- Large sample (>150,000)
= could be 1%

Big enough that you can state that the results can be generalized to the larger population

* The greater the diversity and differences that exist in your population, the larger the sample size should be.

BUT THEY WERE SELECTED RANDOMLY

Selecting A Sample

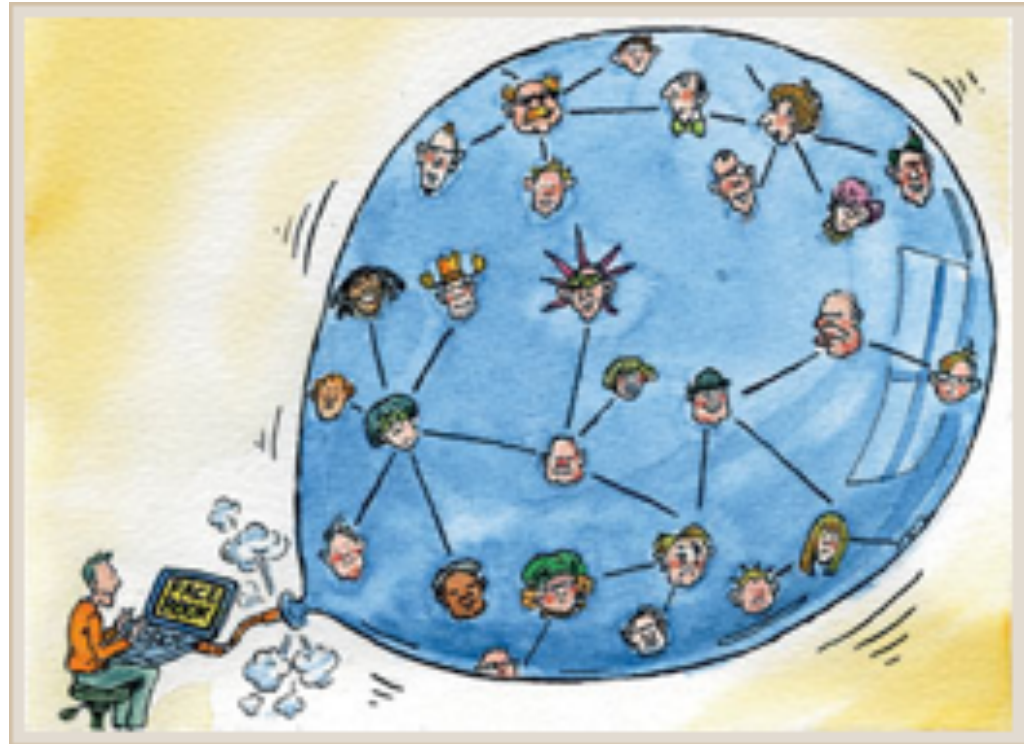




Probabilistic



Non-Probabilistic



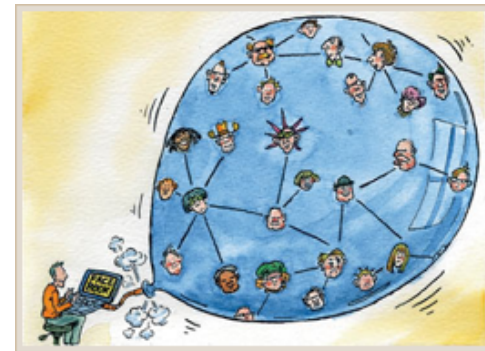
Ways to create random samples:



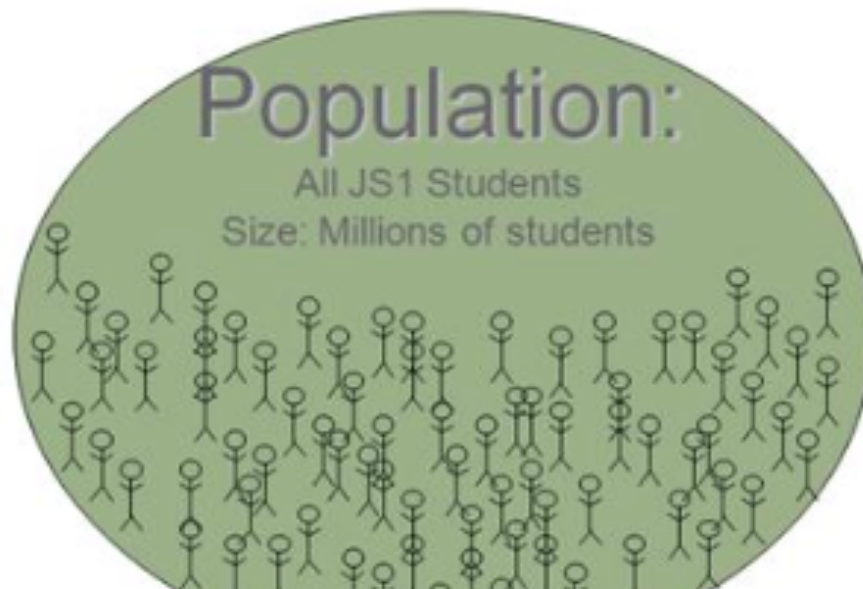
Simple Random
Cluster Random
Systematic Random
Stratified Random

Way to create non-random samples:

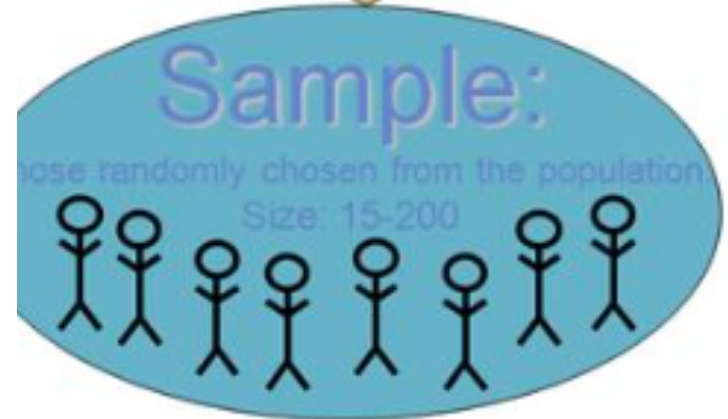
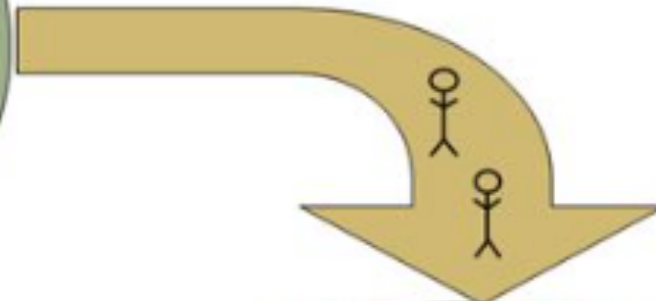
Quota Sample
Convenience Sample
Purposive Sample



Simple Random





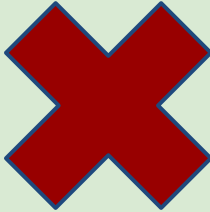

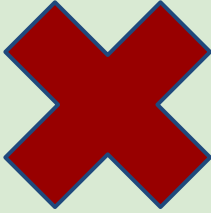
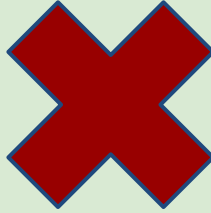
Participants are chosen randomly either through a random number table or putting all names in a hat.



100 Random Numbers

18709	85597	84933	60366	60625	12964	29390	53553	07623	45412	05487	51821	86261
09500	86665	81729	69980	05228	99483	43276	11896	32595	43940	36463	58894	91601
93478	34731	37531	55689	01214	64639	21250	51417	14032	26186	63166	78784	58489
19373	10164	11232	08028	17641	88801	75320	89206	47549	99078	71048	02023	09096
14437	98415	46481	02283	61434	30863	22577	00551	40072	21509	03755	30459	50349
17236	16573	92006	65707	18045	61030	85192	12705	77052	10569	83461	91342	41140
18305	13368	01619	36867	31122	74916	16977	64234	75579	68102	90533	96683	25118
66371	69170	87329	06296	96278	52889	83056	19114	57826				

Specs: This table of 100 random numbers was produced according to the following specifications:
Numbers were randomly selected from within the range of 0 to 99999. Duplicate numbers were allowed.
This table was generated on 1/18/2015.

	Random Sample?	Control Group?
Experimental		
Quasi-Experimental		
Non-Experimental		

Experimental Design

X - treatment

O - outcome

Good: O X O Observe, Treatment, Observe

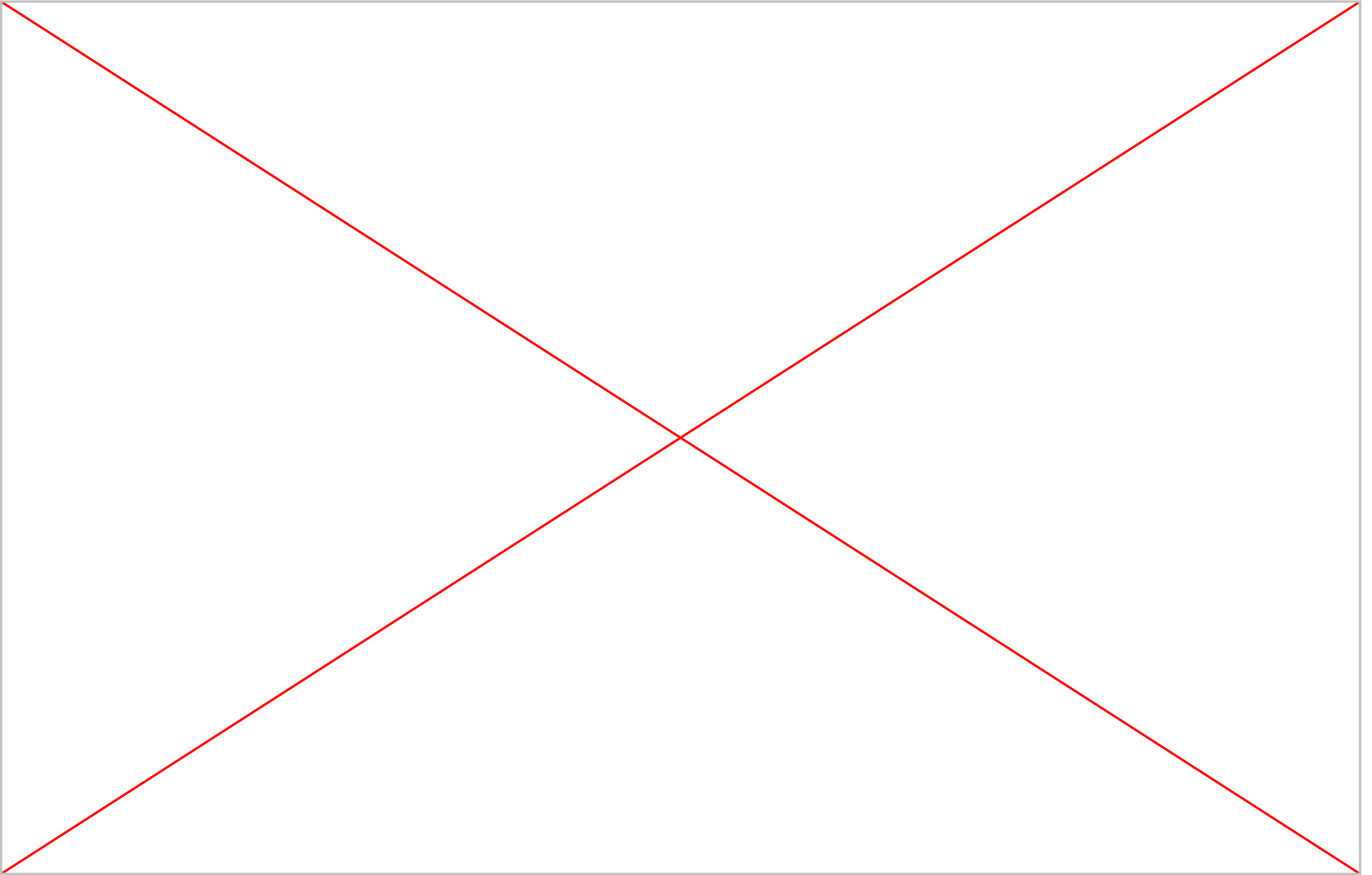
Better: R X O Random Sample, Treatment, Observation

R - O Random Sample, No treatment, Observ

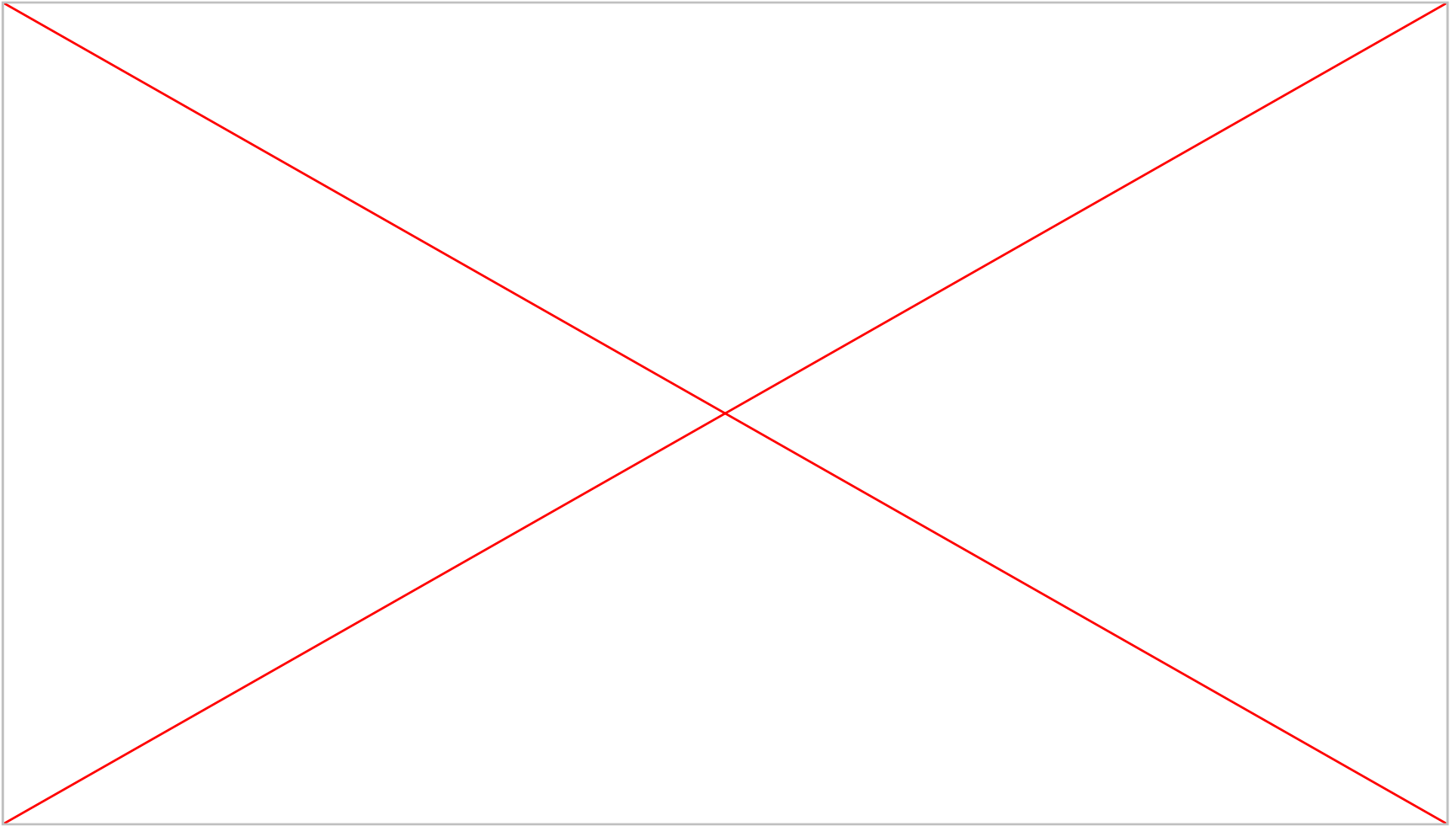
Best: R O X O Random, Observ, Treat, Observ

R O - O Random, Observ, No Treat, Observ

Cluster Random

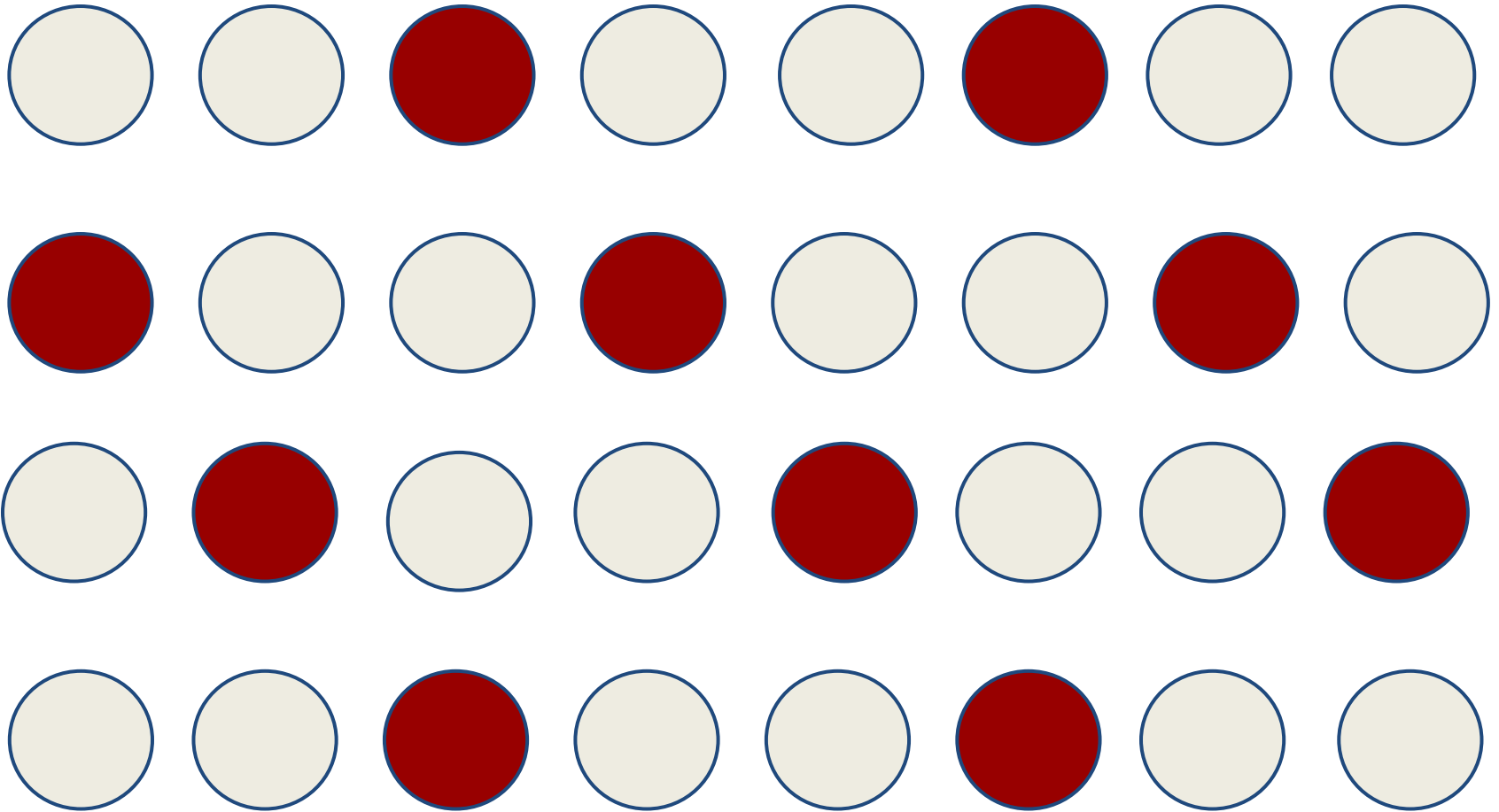


Cluster Random

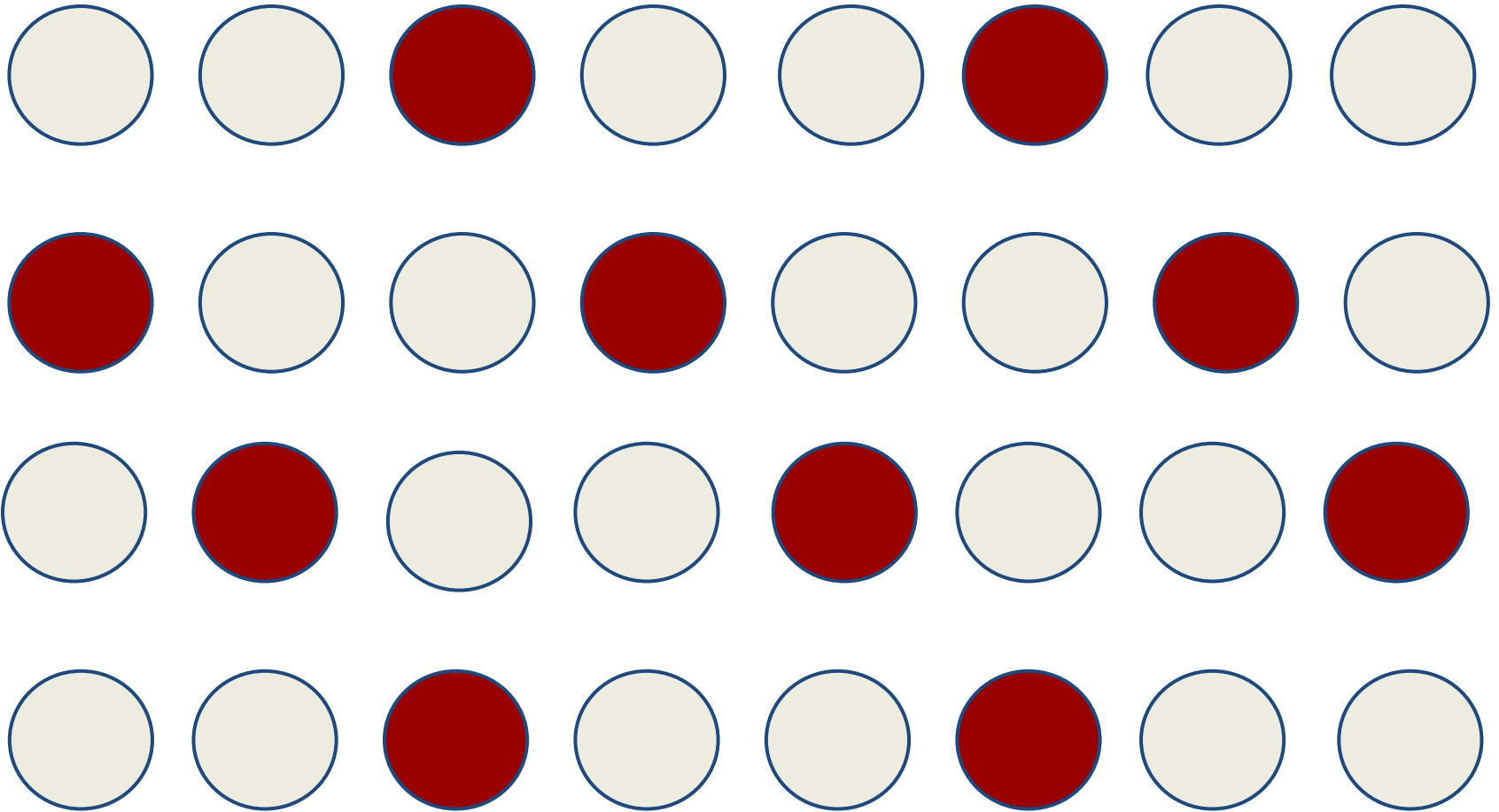


all school buildings in PA, randomly choose buildings,
then randomly choose teachers from each building

Systematic Random

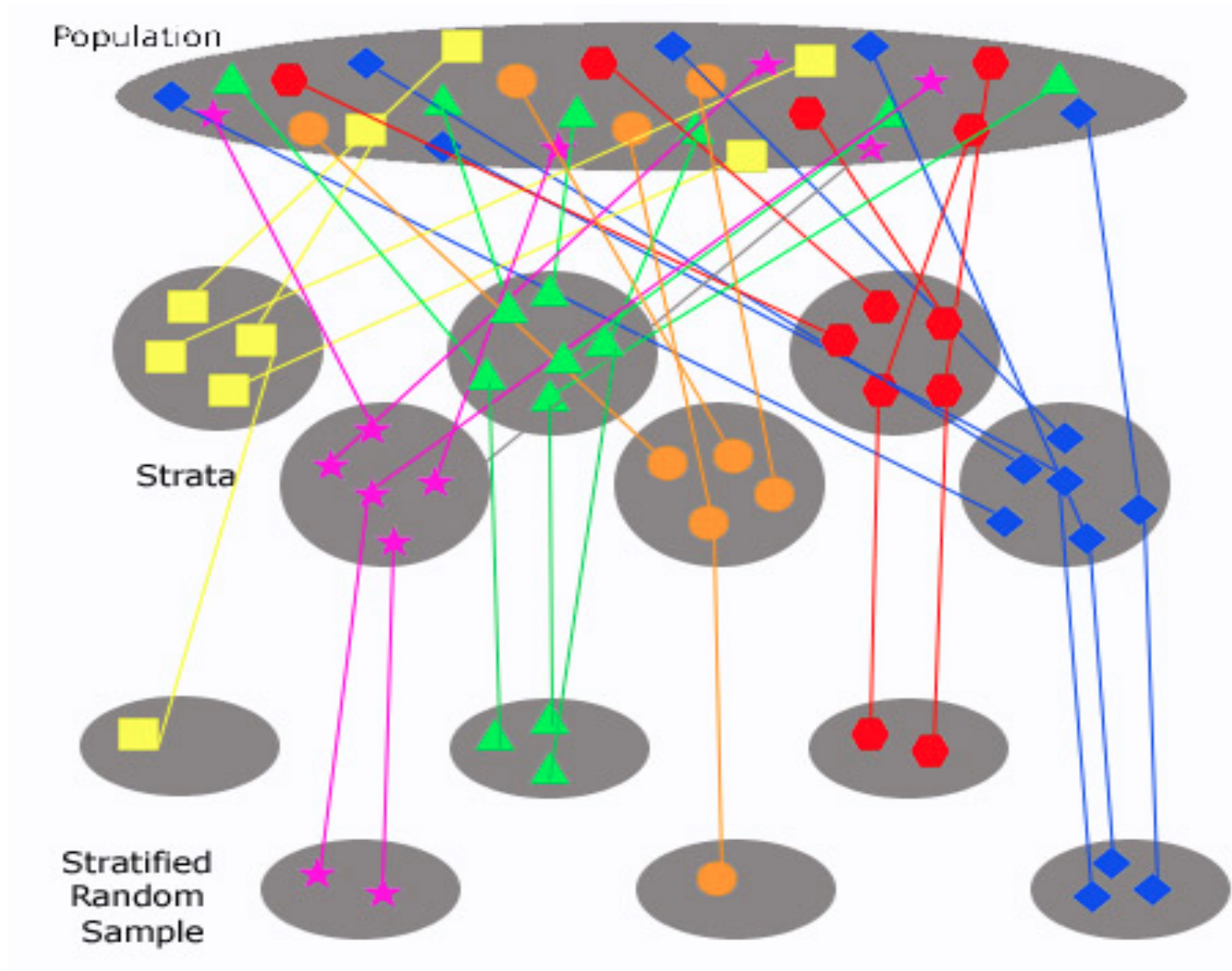


Systematic Random

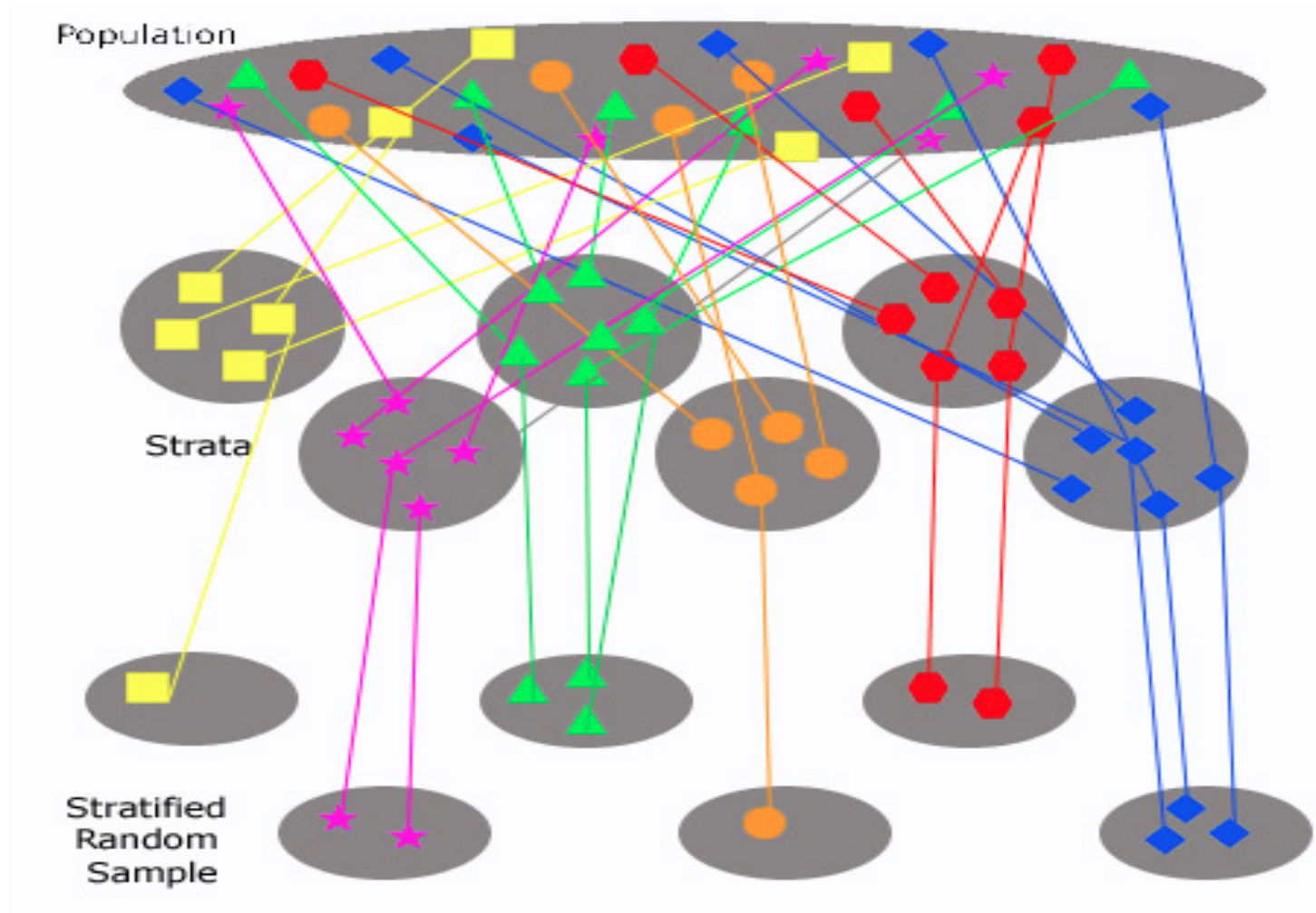


random drug test, backpack check, or survey
of students entering a school

Stratified Random

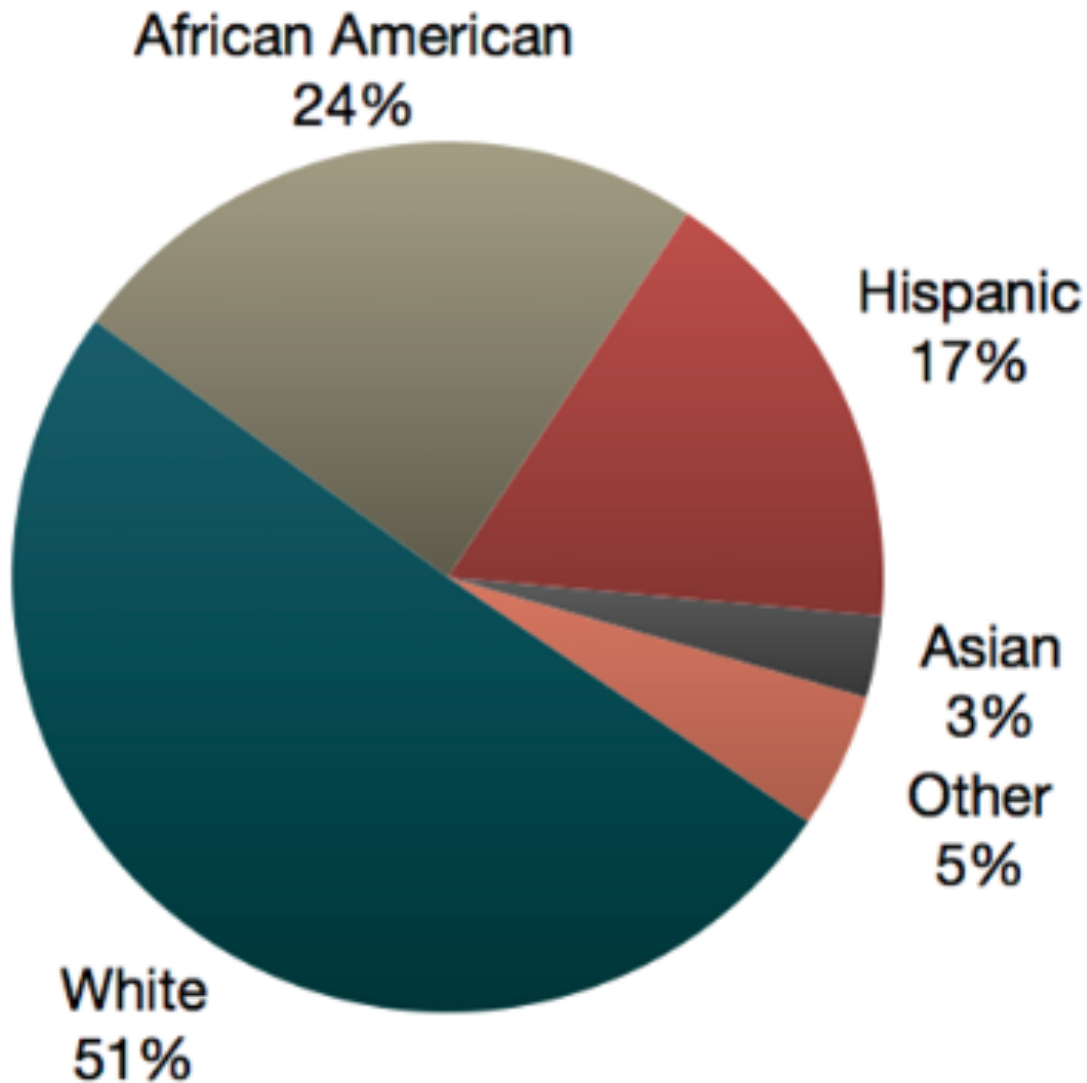


Stratified Random



survey of all student organizations in the school district

Quota Sample



51

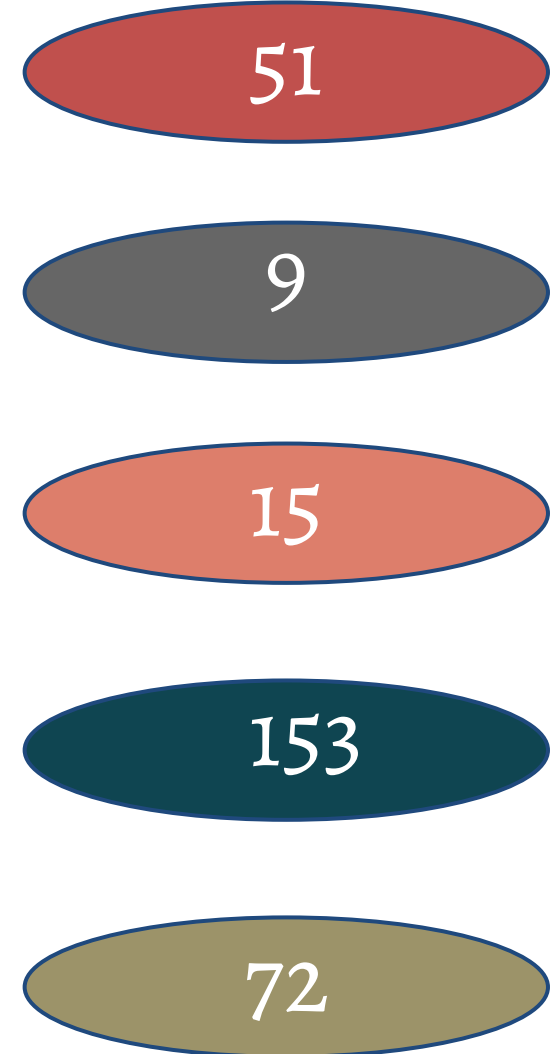
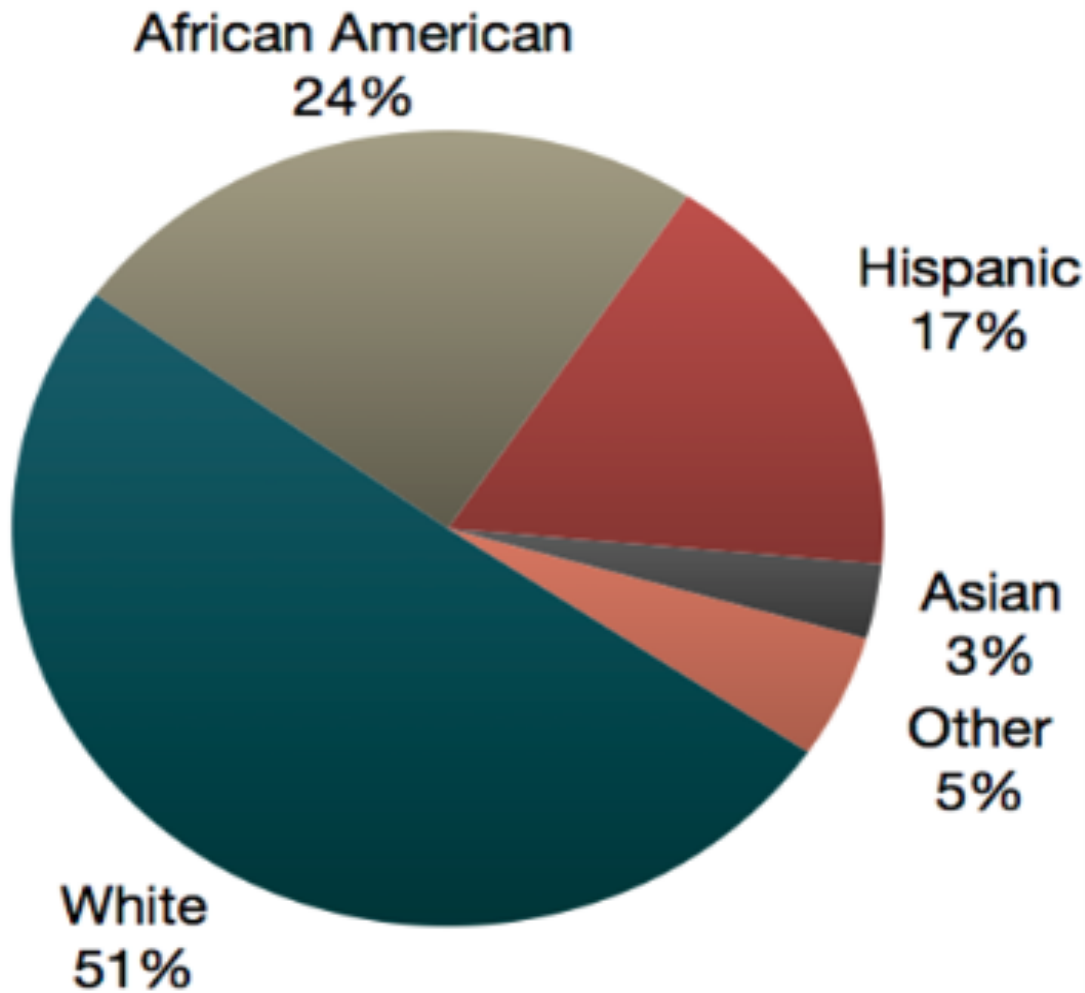
9

15

153

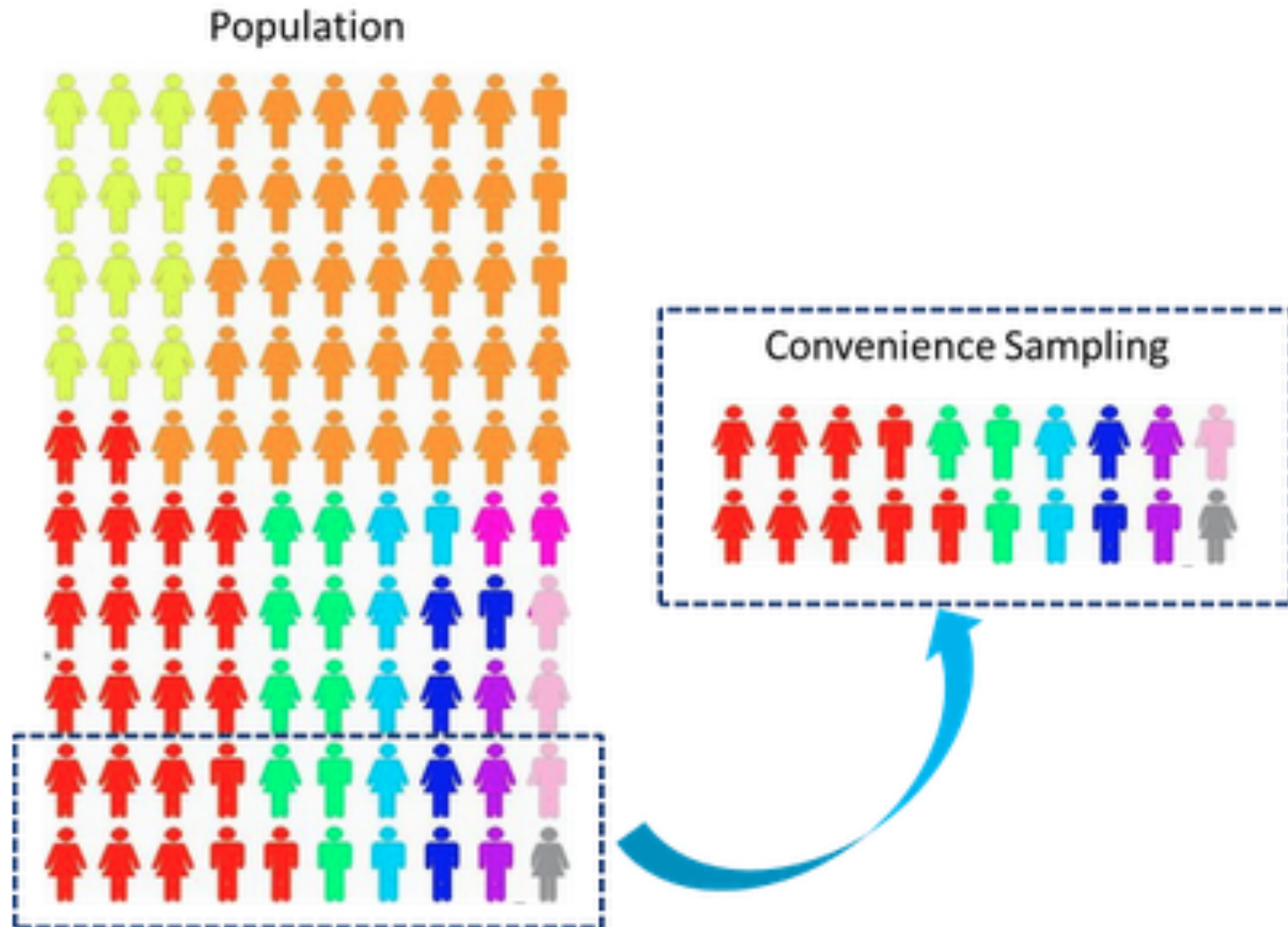
72

Quota Sample

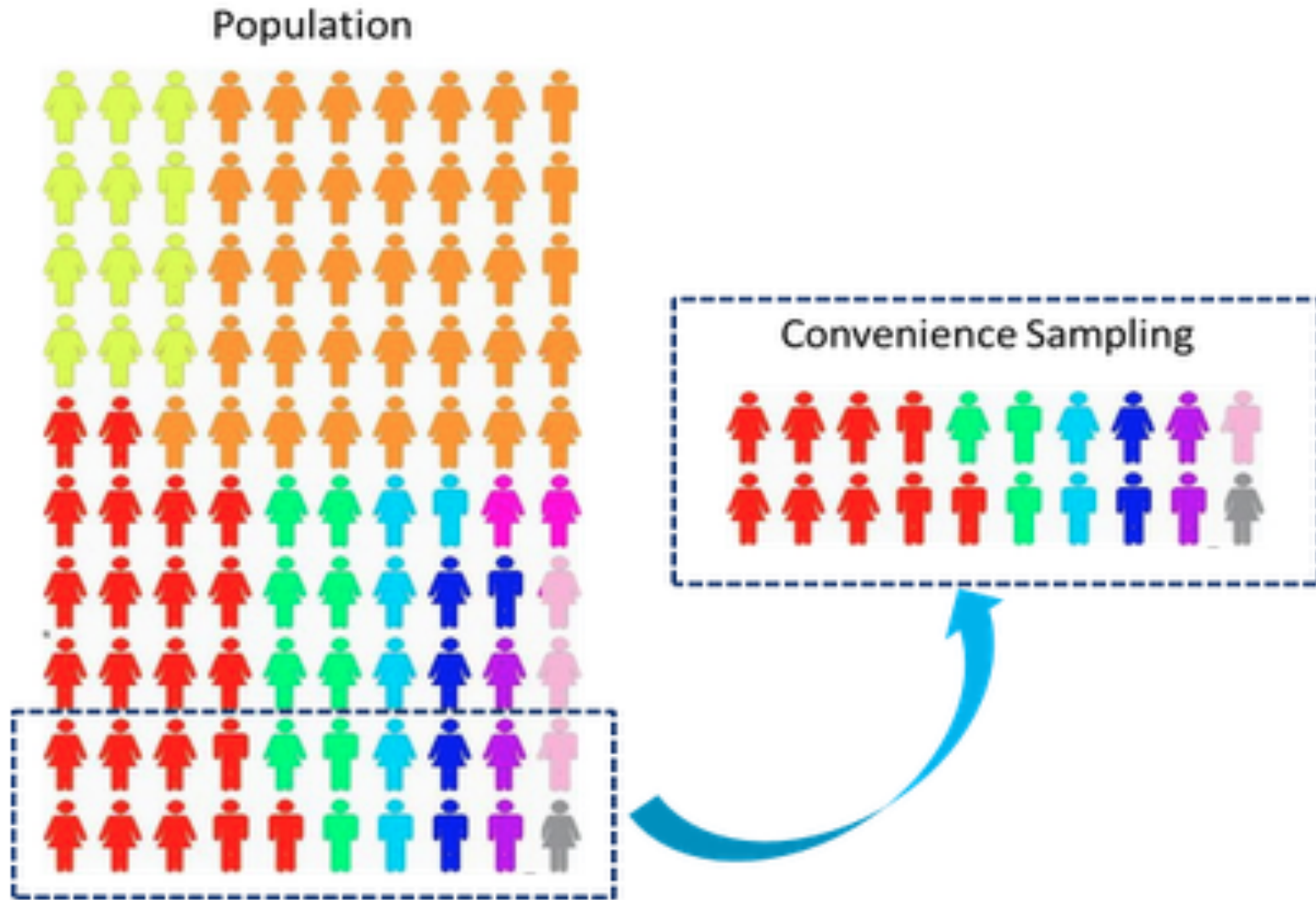


survey of all ethnic groups in a school by the percentage in which they are represented in the population

Convenience Sample

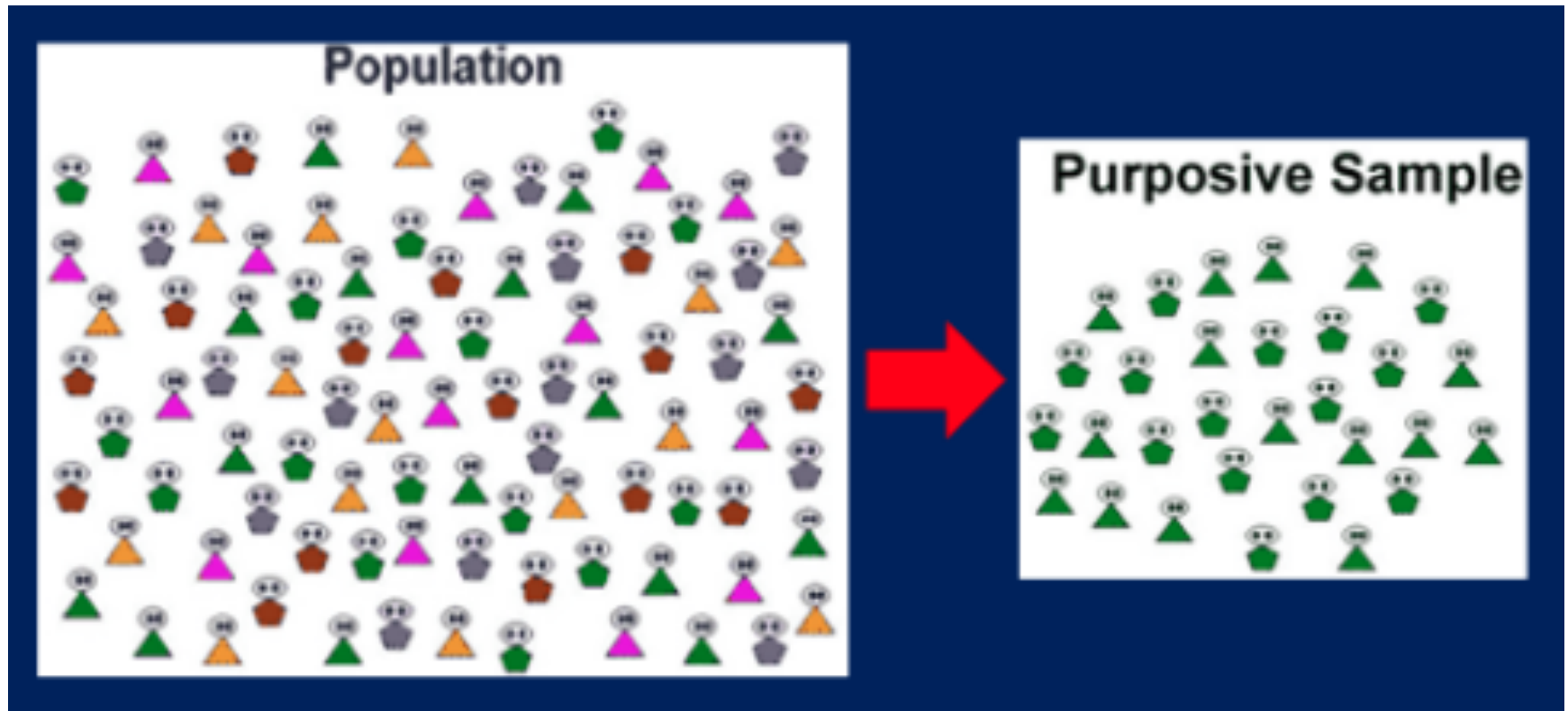


Convenience Sample

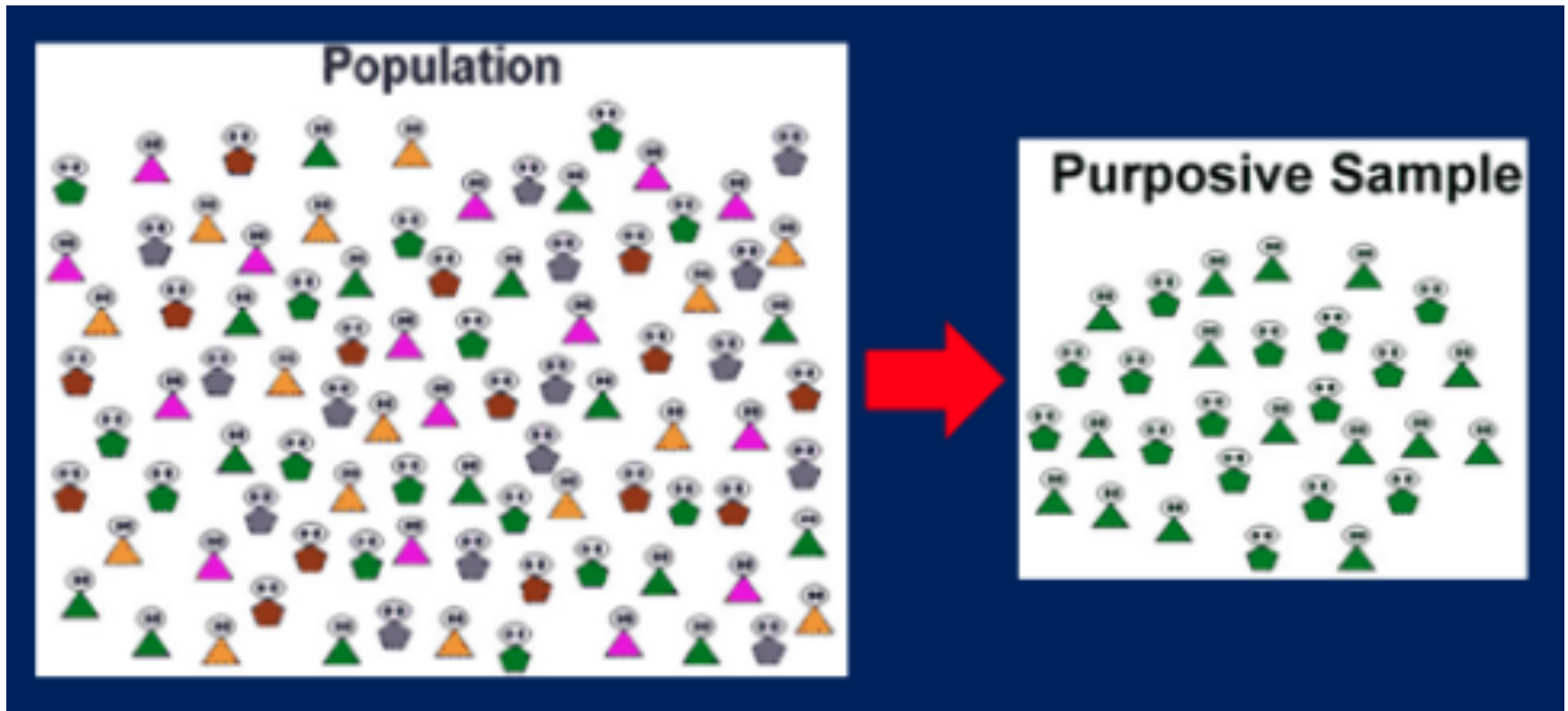


PVAAS data for teachers in the district in which you work

Purposive Sample



Purposive Sample



only want to survey the students with IEPs and GIEPS in the district

CASEL Study p. 405 - 412

1. Research Question?
2. Research Method?
 “Population” = SEL programs
3. Time Frame of programs?
4. Five hypotheses?
5. Program Sampling/Data Collection?
6. Inclusion and Exclusion Criteria?
7. Overall Impression of information